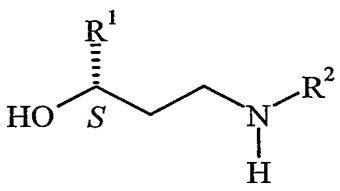
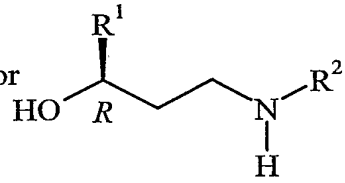
Claims

1. A process for the preparation of salts of
a carboxylic acid with an aminoalcohol of the formula

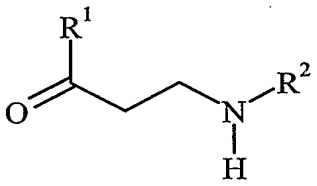


Ia, and/or


Ib,

wherein R^1 is selected from the group consisting of 2-thienyl, 2-furanyl and phenyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups, and wherein R^2 is C_{1-4}-alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups,

comprising asymmetrically hydrogenating a salt of
a carboxylic acid with an aminoketone of the formula



II,

wherein R^1 and R^2 are as defined above,
in the presence of a transition metal complex of a diphosphine ligand, preferably of an aryl- or biaryldiphosphine ligand.

2. The process of claim 1, wherein the carboxylic acid is selected from the group consisting of optionally substituted C_{1-18}-alkanoic acids and optionally substituted mono- and bicyclic aromatic acids.

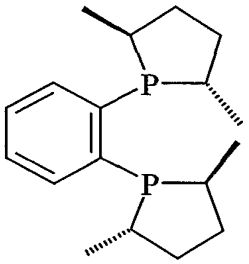
3. The process of claim 1 or 2, wherein R^1 is 2-thienyl, optionally substituted with one or more halogen atoms, and R^2 is methyl or ethyl.

4. The process of claim 3, wherein the compound of formula II is selected from the group consisting of (*S*)-(−)-3-*N*-methylamino-1-(2-thienyl)-1-propanol, (*S*)-(−)-3-*N*-methyl-

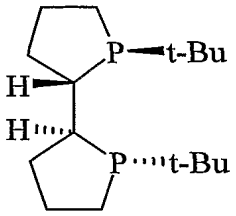
amino-1-(3-chloro-2-thienyl)-1-propanol, (*R*)-(+)-3-*N*-methylamino-1-(2-thienyl)-1-propanol and (*R*)-(+)-3-*N*-methylamino-1-(3-chloro-2-thienyl)-1-propanol.

5. The process of any of claims 1 to 4, wherein the transition metal is selected from the group consisting of rhodium, ruthenium or iridium, preferably rhodium.

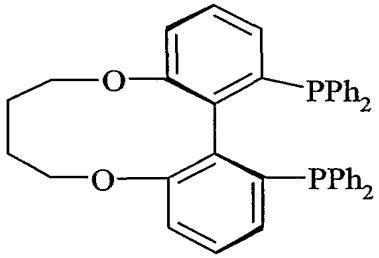
6. The process of any of claims 1 to 7, wherein the diphosphine ligand is selected from the group consisting of



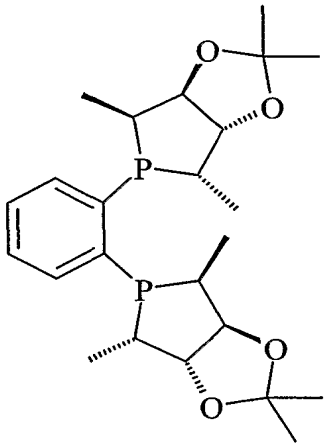
(*S,S*)-"Me-DuPhos",



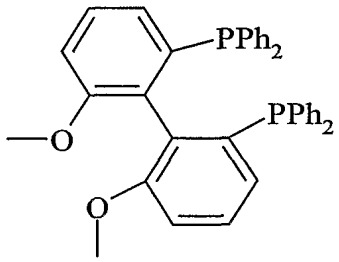
(*R,R,S,S*)-"TangPhos",



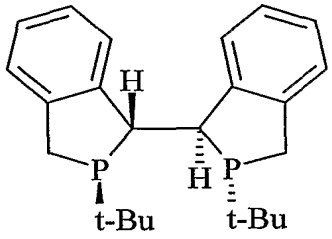
(*S*)-"C4-TunePhos",



(*S,S,S,S*)-"Me-KetalPhos",



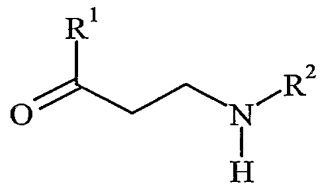
(*S*) and (*R*)-"MeO-BiPhep"



and "(R_P,R_P,S_C,S_C)-DuanPhos".

7. The process of any of claims 1 to 6, wherein the compounds of formulae Ia and Ib are obtained from their corresponding salts with a carboxylic acid by hydrolysis in the presence of an alkali- or earth alkali hydroxide.

8. Salts of a carboxylic acid with an aminoketone of the formula

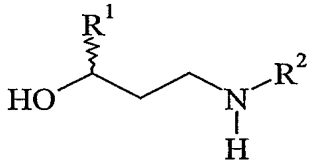


II,

wherein R^1 is 2-thienyl or 2-furanyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups, and wherein R^2 is C_{1-4}-alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups.

9. The salts of claim 8, wherein the acid is selected from the group consisting of C_{1-18}-alkanoic acids, (−)-2,3:4,6-di-*O*-isopropylidene-2-keto-L-gulonic acid, (+)-2,3:4,6-di-*O*-isopropylidene-2-keto-D-gulonic acid, 2-keto-L-gulonic acid, 2-keto-D-gulonic acid, L-aspartic acid, D-aspartic acid, DL-aspartic acid, benzoic acid, 3-methyl-benzoic acid, salicylic acid and 1-, or 2-naphthalenecarboxylic acid.

10. Salts of a carboxylic acid with an aminoalkohol of the formula



I,

wherein R^1 is 2-furanyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups, and wherein R^2 is C_{1-4}-alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more C_{1-4}-alkyl or C_{1-4}-alkoxy groups, with the exception of salts, wherein the acid is (−)-2,3:4,6-di-*O*-isopropylidene-2-keto-L-gulonic acid or (+)-2,3:4,6-di-*O*-iso propylidene-2-keto-D-gulonic acid.